

IN THE CLAIM

1 1. (Currently Amended) A method for managing a memory system having a plurality of  
2 subsystems, comprising the steps of:

3 upon accessing the memory system for a piece of data used by a first  
4 process

5 determining ~~the~~ an access time to acquire the piece of data in the  
6 memory system;

7 comparing the determined access time to a threshold; and

8 taking actions based on ~~the~~ results of the comparing step; including  
9 postponing execution of the first process and allowing

10 execution of a second process;

11 wherein a value of the threshold is selected based on one or a combination  
12 of

13 cost of switching processes for execution, and

14 whether the value is a realistic time for a memory access.

1 2. (Canceled)

1 3. (Currently Amended) The method of claim [2] 1 wherein an intelligence performing the

2 steps of postponing and allowing upon a notification from a latency manager

3 regarding a relationship between the determined access time and the threshold; the

4 latency manager determining the relationship independent from the intelligence

5 ~~latency manager notifying the intelligence that the determined access time is close~~

6 ~~to, equal to, or greater than the threshold; the latency manger performing the step~~

7 ~~of determining independent from the intelligence.~~

- 1 4. (Original) The method of claim 3 wherein the intelligence is selected from a group  
2 consisting of a processor working with the memory system, an operating system  
3 working with the memory system, software running on the processor, and a  
4 memory manager managing the memory system.
- 1 5. (Currently Amended) The method of claim 1, ~~if the step of comparing indicates that the~~  
2 ~~determined access time is close to, equal to, or greater than the threshold, wherein~~  
3 ~~the actions further comprising the step of~~ include monitoring the memory system  
4 or a system using the memory system.
- 1 6. (Original) The method of claim 1 wherein the determined access time is selected as the  
2 longest access time of a plurality of access times each of which corresponds to a  
3 memory access in a multiple memory access.
- 1 7. (Original) The method of claim 1 further comprising the step of accessing the piece of  
2 data in more than one subsystem at the same time; one subsystem having a shorter  
3 access time and one subsystem having a longer access time; the determined access  
4 time being that of the subsystem having the shorter access time, and, if the piece of  
5 data is missed in the subsystem having the shorter access time, then the  
6 determined access time being that of the subsystem having the longer access time.
- 1 8. (Currently Amended) The method of claim 1 further comprising the step of updating a  
2 ~~previous~~ previously determined access time to the determined access time if the  
3 determined access time is greater than the ~~previous~~ previously determined access  
4 time.

1 9. (Original) The method of claim 1 further comprising the step of notifying an  
2 intelligence working with the memory system; the intelligence being selected from  
3 a group consisting of a processor, an operating system, software running on the  
4 processor, and a memory manager managing the memory system; the intelligence  
5 performing the step of taking actions.

1 10. (Original) The method of claim 1 further comprising the step of changing the  
2 determined access time upon performing a task selected from a group consisting of  
3 changing the threshold, initiating an interrupt to an intelligence working with the  
4 memory system, and postponing executing the first process and allowing  
5 executing a second process.

1 11. (Currently Amended) The method of claim 1 wherein the determined access time is  
2 selected from ~~the~~ a time to access at least one subsystem.

1 12. (Currently Amended) The method of claim 1 wherein a latency manager performing  
2 the step of determining; the latency manager being on ~~the~~ a data path between a  
3 processor working with the memory system and the plurality of subsystems.

1 13. (Original) The method of claim 1 wherein the data is accessed from a subsystem  
2 having a shorter access time to a subsystem having a longer access time or in a  
3 non-sequential order.

1 14. (Currently Amended) A method for managing a memory system having a plurality of  
2 subsystems, comprising the steps of:

3           comparing an access time of a subsystem to a threshold; a value of the  
4           threshold being selected based on one or a combination of cost of  
5           switching processes for execution and whether the value is a  
6           realistic time for a memory access;  
7           earmarking [a] the subsystem based on results of the comparing step;  
8           from the plurality of subsystems, determining an order for data to be  
9           accessed from a subsystem having a shorter access time to a  
10          subsystem having a longer access time; and  
11          upon accessing the memory system for a piece of data used by a first  
12          process, if the data is missed in the earmarked subsystem, then  
13          postponing executing the first process and allowing executing a  
14          second process.

1   15. (Currently Amended) The method of claim 14 wherein an intelligence performing the  
2       steps of postponing and allowing upon notification from a latency manager  
3       regarding a relationship between the determined access time and the threshold  
4       ~~notifying the intelligence that the determined access time is close to, equal to, or~~  
5       ~~greater than the threshold;~~ the intelligence being selected from a group consisting  
6       of a processor working with the memory system, an operating system working  
7       with the memory system, software running on the processor, a memory manager  
8       managing the memory system; the latency manger being part of managing the  
9       memory system.

1   16. (Currently Amended) An apparatus for managing a memory system having a plurality  
2       of subsystems, comprising:

3 means for, upon accessing the memory system for a piece of data used by a  
4 first process,  
5 determining ~~the~~ an access time to acquire the piece of data in the  
6 memory system;  
7 comparing the determined access time to a threshold; and  
8 taking actions based on ~~the~~ results of the comparing step; including  
9 postponing execution of the first process and allowing  
10 execution of a second process;  
11 wherein a value of the threshold is selected based on one or a combination  
12 of  
13 cost of switching processes for execution, and  
14 whether the value is a realistic time for a memory access.

1 17. (Canceled)

1 18. (Original) The apparatus of claim 16 wherein the determined access time is selected  
2 as the longest access time of a plurality of access times each of which corresponds  
3 to a memory access in a multiple memory access.

1 19. (Original) The apparatus of claim 16 further comprising means for accessing the  
2 piece of data in more than one subsystem at the same time; one subsystem having  
3 a shorter access time and one subsystem having a longer access time; the  
4 determined access time being that of the subsystem having the shorter access time,  
5 and, if the piece of data is missed in the subsystem having the shorter access time,  
6 then the determined access time being that of the subsystem having the longer  
7 access time.

1 20. (Currently Amended) An apparatus for managing a memory system having a plurality  
2 of subsystems, comprising:

3 means for comparing an access time of a subsystem to a threshold; a value  
4 of the threshold being selected based on one or a combination of  
5 cost of switching processes for execution and whether the value is a  
6 realistic time for a memory access;

7 means for earmarking a subsystem; and

8 means for determining, from the plurality of subsystems, an order for data  
9 to be accessed from a subsystem having a shorter access time to a  
10 subsystem having a longer access time; and

11 wherein upon accessing the memory system for a piece of data used by a  
12 first process, if the data is missed in the earmarked subsystem, then  
13 means for postponing ~~executing~~ execution of the first process and  
14 allowing ~~executing~~ execution of a second process.

1 21. (Currently Amended) A computer-readable medium embodying instructions for a  
2 computer to perform a method for managing a memory system having a plurality  
3 of subsystems, the method comprising the steps of:

4 upon accessing the memory system for a piece of data used by a first

5 process,

6 determining ~~the~~ an access time to acquire the piece of data in the  
7 memory system;

8 comparing the determined access time to a threshold; and

9 taking actions based on ~~the~~ results of the comparing step; including

10 postponing execution of the first process and allowing

11 execution of a second process;

12                   wherein a value of the threshold is selected based on one or a combination  
13                   of  
14                   cost of switching processes for execution, and  
15                   whether the value is a realistic time for a memory access.

1   22. (Canceled)

1   23. (Original) The computer-readable medium of claim 21 wherein the determined access  
2       time is selected as the longest access time of a plurality of access times each of  
3       which corresponds to a memory access in a multiple memory access.

1   24. (Original) The computer-readable medium of claim 21 wherein the method further  
2       comprising the step of accessing the piece of data in more than one subsystem at  
3       the same time; one subsystem having a shorter access time and one subsystem  
4       having a longer access time; the determined access time being that of the  
5       subsystem having the shorter access time, and, if the piece of data is missed in the  
6       subsystem having the shorter access time, then the determined access time being  
7       that of the subsystem having the longer access time.

1   25. (Currently Amended) A computer-readable medium embodying instructions for a  
2       computer to perform a method for managing a memory system having a plurality  
3       of subsystems, the method comprising the steps of:  
4               comparing an access time of a subsystem to a threshold; a value of the  
5               threshold being selected based on one or a combination of cost of  
6               switching processes for execution and whether the value is a  
7               realistic time for a memory access;

8           earmarking [a] the subsystem based on results of the comparing step;  
9           from the plurality of subsystems, determining an order for data to be  
10           accessed from a subsystem having a shorter access time to a  
11           subsystem having a longer access time; and  
12           upon accessing the memory system for a piece of data used by a first  
13           process, if the data is missed in the earmarked subsystem, then  
14           postponing executing the first process and allowing executing a  
15           second process.

1   26. (New) The computer-readable medium of claim 21 wherein the actions further include  
2           monitoring the memory system or a system using the memory system.

1   27. (New) The computer-readable medium of claim 21 wherein the method further  
2           comprising the step of updating a previously determined access time to the  
3           determined access time if the determined access time is greater than the previously  
4           determined access time.

1   28. (New) The computer-medium of claim 1 wherein the determined access time is  
2           selected from a time to access at least one subsystem.